WEST Search History

DATE: Wednesday, September 17, 2003

Set Name side by side	Query	Hit Count	Set Name result set
DB=USPT,PGPB,JPAB,EPAB,DWPI; PLUR=YES; OP=OR			
L22	(paramyxovir$5 or RSV or parainfluenza).clm. and (heterologous adj (protein or RNA or sequence)).clm.	15	L22
L21	L17 and ((paramyxovirus or (respiratory adj syncytial adj virus) or rsv or parainfluenza) same (heterologous adj (protein or gene or sequence or RNA)))	120	L21
L20	L19 and @ad<19970926	465	L20
L19	L17 and heterologous adj sequence	1940	L19
L18	L17 and heterologous sequence	911693	L18
L17	(recombinant or mutat$4 or (genetic$4 with (varia$4 or manipulated))) and (paramyxoviridae or paramyxovirus or (respiratory adj syncytial adj virus) or (rsv same virus) or (parainfluenza with virus))	7064	L17
DB=USPT; PLUR=YES; OP=OR			
L16	(recombinant or mutat$4 or (genetic$4 with (varia$4 or manipulated))) and (paramyxoviridae or paramyxovirus or (respiratory adj syncytial adj virus) or (rsv same virus) or (parainfluenza with virus))	4150	L16
DB=USPT,PGPB,JPAB,EPAB,DWPI; PLUR=YES; OP=OR			
L15	5716821.pn.	2	L15
L14	5789229.pn.	2	L14
L13	L12 and l11	83	L13
L12	(gene or genome) same (paramyxovir$5 or RSV or respiratory adj syncytial)	5137	L12
L11	L10 and l8	106	L11
L10	L7 and (RSV or respiratory adj syncytial) same (recombinant or synthetic or heterolgous or reporter or substitution or deletion or insert$5 or chimer$5)	289	L10
L9	L7 and (RSV or respiratory adj syncytial) and (recombinant or synthetic or heterolgous or reporter or substitution or deletion or insert$5 or chimer$5)	292	L9
L8	l7 and vaccine	107	L8
L7	L6 and l4	292	L7
L6	L5 and l4	292	L6
L5	(paramyxovir$5 or RSV or respiratory adj syncytial) same (recombinant or synthetic or heterolgous or reporter or substitution or deletion or insert$5 or chimer$5)	3829	L5

L4	L3 and (RSV or respiratory adj syncytial)	567	L4
L3	L2 and @ay<1995	647	L3
L2	L1 and (gene or genome) same (modif$8 or insertion or heterologous or exogenous or synthetic or mutation or varia$6)	7210	L2
L1	(paramyxovir$5 or RSV or respiratory adj syncytial) and (recombinant or synthetic or heterolgous or reporter or substitution or deletion or insert$5 or chimer$5)	9150	L1

END OF SEARCH HISTORY

Sendai virus, a murine parainfluenza virus type 1, replicates to a level similar to human PIV1 in the upper and lower respiratory tract of African green monkeys and chimpanzees.

Skiadopoulos MH, Surman SR, Riggs JM, Elkins WR, St Claire M, Nishio M, Garcin D, Kolakofsky D, Collins PL, Murphy BR.

Respiratory Viruses Section, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Maryland 20892, USA. mskiadopoulos@niaid.nih.gov

Human parainfluenza virus type 1 (HPIV1), a major cause of croup in infants and young children, accounts for 6% of hospitalizations for pediatric respiratory tract disease. The antigenically related Sendai virus, referred to here as murine PIV1 (MPIV1), is being considered for use as a live-attenuated vaccine to protect against HPIV1 (J. L. Hurwitz, K. F. Soike, M. Y., Sangster, A. Portner, R. E. Sealy, D. H. Dawson, and C. Coleclough, 1997, Vaccine 15(5), 533-540) and also as a recombinant vaccine vector expressing antigens to protect against viral disease in humans. However, in the 1950s MPIV1 was reported to have been isolated from humans, suggesting that zoonotic transmission might have occurred. It is therefore important to examine the ability of MPIV1 to replicate in nonhuman primates, i.e., surrogate hosts for humans. In the present study the level of replication of MPIV1 and HPIV1 was compared in African green monkeys and chimpanzees. Surprisingly, MPIV1 replicated as efficiently as HPIV1 in the upper and lower respiratory tract of African green monkeys at doses of 10(4) and 10(6) and replicated only slightly less efficiently at both sites in chimpanzees. African green monkeys immunized with MPIV1 were highly resistant to subsequent challenge with HPIV1 even though MPIV1 did not induce a detectable HPIV1-neutralizing antibody response. The high level of replication of MPIV1 observed in the upper and lower respiratory tract of these primates suggests that MPIV1 likely would require significant attenuation before it could be given to humans as a vaccine against HPIV1 or as a vaccine vector. Its ability to efficiently replicate in nonhuman primates suggests that MPIV1 lacks a significant host range restriction in primates and could theoretically cause zoonotic disease in humans. (c) 2002 Elsevier

1: Vaccine. 2002 Mar 15;20(13-14):1846-52. Related Articles, Links

ELSEVIER PUBLISHED JOURNAL

The recombinant chimeric human parainfluenza virus type 1 vaccine candidate, rHPIV3-1cp45, is attenuated, immunogenic, and protective in African green monkeys.

Skiadopoulos MH, Tatem JM, Surman SR, Mitcho Y, Wu SL, Elkins WR, Murphy BR.

Respiratory Viruses Section, Laboratory of Infectious Diseases, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD 20892, USA. mskiadopoulos@niaid.nih.gov

A recombinant live-attenuated chimeric human parainfluenza virus type 1 (HPIV1) candidate vaccine was previously generated by replacing the fusion (F) and hemagglutinin-neuraminidase (HN) glycoprotein open reading frames (ORFs) of the HPIV3 candidate vaccine, rHPIV3cp45, with those of wild-type HPIV1. Previously, this recombinant chimeric virus, designated rHPIV3-1cp45, exhibited a greater level of the temperature sensitivity of replication in vitro and a greater level of attenuation of replication in the respiratory tract of immunized hamsters when compared to its HPIV3cp45 parent virus. In the present study, rHPIV3-1cp45 was evaluated for its level of attenuation and efficacy in African green monkeys (Cercopithecus aethiops), a primate in which both HPIV1 and HPIV3 wild-type viruses replicate efficiently. The rHPIV3-1cp45 candidate vaccine was as restricted in replication in the upper and lower respiratory tract as its thoroughly characterized rHPIV3cp45 parent indicating that the attenuating mutations present in the rHPIV3cp45 backbone specified an appropriate level of attenuation of rHPIV3-1cp45 for primates. The level to which rHPIV3-1cp45 replicated in the respiratory tract of African green monkeys was also sufficient to induce a strong immune response to HPIV1 and provided protection against challenge with wild-type HPIV1. These results provide a basis for further evaluation of this HPIV1 candidate vaccine in humans.

PMID: 11906774 [PubMed - indexed for MEDLINE]